

POSTER GALLERY

Walking into the Metaverse

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This poster offers an exploratory journey embarking on the digital world navigating 2D to 3D images creation to elevate conceptual boards by creating an immersive experience through interactive images and sound. The process of making allows designers to ideate and translate intangible elements conceptually, such as embedding emotions and memories as conceptual ideas through 3D elements.

The digital space allows designers to translate conceptual ideas through interactive and immersive conceptual boards using moving images, sound and creative coding to heighten the viewer's interactive AR experience. This process allows designers to translate their ideas through building a narrative storytelling approach from concept to realization of the collection. The methodologies enable the designers to embed their emotions through the interactive visuals and sound as an experience and allow - under optimum circumstances - to lead the viewer toward experiencing that emotion. Creative coding adds another layer toward generative art, which will allow designers to express through interactivity with the tools.

Walking into the metaverse allows viewers to interpret the narrative within the story itself. The images presented on this poster comprises AI-generated artwork by using VQGAN (Vector Quantized Generative Adversarial Network) and CLIP (Contrastive Language-Image Pre-training). VQGAN+CLIP is a neural network architecture that uses a text-to-image model that generates images of variable size given a set of text prompts (and some other parameters). The result of the generated artwork is then further developed with Adobe Photoshop to create the outcome.

This process investigates the findings on the importance of multi-sensory experience in conceptual design processes, enactive engagement of the embodied mind during the act of doing. It also led to the discovery of Conceptual Space in the digital realm and how digital space shifts the perception of work presented through the platform. This exploration proposes new



BANGLE INDUSTRY OF FIROZABAD: A CONFLICT OF PARALLELS

OUR
UNDERSTANDING

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CU



Glass bangles in India are
worshiped as a symbol of the
Goddess of wealth and affluence are
an integral part of Indian cul- ture.
Religiously believed to be the
harbinger of love and prosperity in
marriages, they hold a strong
sentimental significance in the life of
Indian

women. The image of glass bangles is
reflected simi- larly throughout the
country through the Hindi Cinema as
well as traditionally via folk songs in
different cultures." The entire after-
noon spent with the neighbourhood
women in selecting colours and
hearing clinking of glass bangles in
the hands of the seller brought me
close to my community." Shared

by an
interviewer

Soma Chatterjee in Encyclopaedia of
Hindi Cinema quotes "The jingling of
glass bangles around a girl's wrist is
definitely culture specific. The jingling
suggests laughter,
cheer, fun , happiness, love and
anticipation. The sound of glass
bangles breaking signifies something
entirely different: widowhood, grief
and tragedy."

ENVIRONMENT

According to research published in
Issue 8, Vol 2 of European Academic
Research paper: The share of
Nitrogen and RSPM in the

immediate surrounding atmosphere of
Firozabad industries is increasing
continuously as a result of chemical
fumes which is the leading cause of
Bronchitis, asthma and other
respiratory disorders in the population.
The quality of Drinking water is also
deteriorated because of fluorides,
nitrates and Total Dissolved Solids
(TDS) which are washed away into the
river body in the form of glass
colouring metallic
oxides.

effectingtheir eyesight severely by the time they turn into adults.

WORKERS

Firozabad district of Uttar Pradesh, India houses the 200-year-old largest glass bangle industry of the world that employs around 0.4 million people directly and indirectly. However more than 70% of the bangle workers aren’t paid even the minimum wages.

“The factories were filthy and condition miserable. The factories did not have any working environment and workers were exposed to immense heat and sound which was far beyond permissible levels,” says the report, which was tabled in monsoon session of Parliament headed by the Parliamentary Standing Committee of Labour. “The workers at shop floor were not given protective gear for their eyes or hands. As they worked in front of furnace and accidents were also common,” informs the report.

CHILDREN

The industry is majorly a household one thateasily lures young children to join their parents by quitting education at an early age and thus subjecting them to child labourand abuse. There is complete ignorance of several laws and Acts like The Factories Act of1948, The Mines Act of 1952, The Child Labour (Prohibition and Regulation) Act of 1986, TheJuvenile Justice (Care and Protection) of Children Act of 2000.

Expert studies show that working around intensely bright flames and furnaces damages the tender tissues of young eyes

Glass bangles are more than just a fashion product in India. Their deep-rooted value in society is reflected through the religious and cultural practices woven around them. These colourful bangles are independent of the class divide as they are an ornament for people from every stratum of society.

An interview published in the Journal of Tourism and Cultural Change mentions a dialogue of one of the interviewers that conveys the influence of Bangles through Hindi cinema:“The best thing I like about the actresses of Bollywood movies is the bangles they wear.....They are exclusive” Contrary to the vibrancy of this bangle culture, the lives of Bangle makers are grim and dark with no recognition for their craft. The consumerist face where “who made this” is ignored over “How much is it for” is mirroredin society.

The story of glass bangles thus showcases a moral conflict within fashion and consumerismwhere emerges a social disbalance as a result.

REFERENCE S

https://books.google.co.in/books?id=8y8vN9A14nkC&pg=PA182&lp-g=PA182&dq=Glass+Bangle+in+Hindi+Movies&source=bl&ots=rzSq2azsg6&sig=ACfU3U2gd5MLPNpl_3zDOTQnUhX88GdAA&hl=en&sa=X&ved=2ahUKEwj7kaCos5jzAhV67XMBHR6XAj8Q6AF68AgIEAM#v=onepage&q=Glass%20Bangle%20in%20Hindi%20Movies&f=false

GLASS BANGLES.pdf

CNPhDpRESENTATIONv1.pdf

Bandyopadhyay,Ranjan (2008), Nostalgia, Identity and Tourism: Bollywood in the Indian Diaspora, To link to this article: <https://doi.org/10.1080/14766820802140463>

Images:

<https://images.unsplash.com/photo-1617651238308-164297e570ef?ixlib=rb-1.2.1&q=80&fm=jpg&crop=entropy&cs=tiny&rgb&dl=saradhi-photography-SwPWxxAv-tw-unsplash.jpg>

<https://images.unsplash.com/photo-1632727136376-2d653c429e44?ixlib=rb-1.2.1&q=80&fm=jpg&crop=entropy&cs=tiny&rgb&dl=redowana-rashid-hridy-e0l8bnL3wYw-unsplash.jpg>



Creating immersive online shopping experience for an upcycled fashion brand

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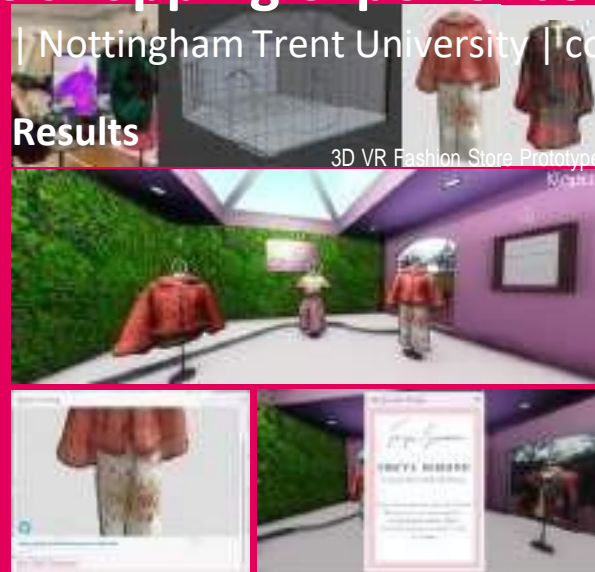
Introduction

The research explored the opportunity of Virtual Reality (VR) technology to enhance online Fashion Retail experience and consumer engagement. Previous research has identified that 3D product visualisation, mental imagery, interactivity, perceived playfulness and informativeness are the key measurements of immersive brand experience created by VR technology (Kang, 2020; Park, 2020). In Brand Experience Dimensions (Brakus, 2009), Sensory is an important scale to measure shopping experience. This project aims to create a multisensory 3D VR fashion store for an upcycled fashion brand in London and evaluate the new brand experience based on the above factors.

Methodology/Technology

This is an experimental research to evaluate if existing VR environment creation and relevant techniques that have been applied for VR game industry has a potential to reinvent fashion retail experience through an immersive virtual fashion store. A wide range of relevant technologies have been evaluated including 3D clothes scanning, 360 panoramic images, 3D environment modelling, interface and interactions, and VR video game engine.

The second stage, the brand's targeted customers and industry people (including the brand owner, VR specialists and marketers) will be recruited to rating the new immersive shopping environment versus the



Results

3D VR Fashion Store Prototype

Discussion

The level of interactivity plays an important part to enhance consumer engagement in a VR shopping store which is considered as a self-motivated technology application (Scholz, 2016). This project experimented with consumer-brand and consumer-consumer level interactions by increasing the ability for consumers (users) to manipulate the VR environment and objects, such as adding social networking to build virtual brand community. During the creative process, each element of products and services appeared in the VR fashion store environment are mapped with hedonic and utilitarian shopping values. Such practice can influence fashion brands to customize their new technology experience for creating shopping value for their targeted consumers.

The results were restricted by the availability of technology and equipment, such as the issue with image quality of 3D clothing created by LiDAR Scanning technique. This may affect the measurements of VR experience in the next stage of research.

Acknowledgement

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References

this research based on existing studies on immersive experience measurement and Brand Experience Dimensions.

conventional online channels through a VR experience scale proposed by



Shangri-La: Smart Fashion Collection Interacting with App via Internet of Thing (IoT)

LI SHAO¹

INTRODUCTION

BACKGROUND

Wireless interactive wearables contribute to retail in the fashion circle, as they can support online shops with the collection and analysis of consumer data based on IoT and may reduce physical retail procedures. The exploration of new experiences in fashion stores (collision between the virtual and physical worlds) faces a great challenge, due to the fast-changing customer needs caused by the rapid rise of online shopping¹. New business rules to balancing online and offline retail are disrupting and rebuilding for the future fashion industry, especially via integrating with new technology. Hwang and Jang² claimed the analysis of customer in-store pathway behaviour via smartphone Wi-Fi signal-capturing technology attracts strong interest, as consumer data directly supports design and retail. Beck and Cri ³ indicated that online virtual fitting rooms effectively improve specific curiosity of the product, purchase intentions, and patronage intentions online and offline. Moreover, smart mirror^{4, 5} having a function of virtual fitting, online product information, connection, and recommendation positively affect service quality and customer satisfaction in offline shopping. However, less study has been found in the innovative user interface (connecting tangible and intangible shopping), especially the sensory experience of texture and tactile (neglected in online shopping). In this poster, an interactive fashion collection with IOS mobile App via IoT is proposed as tangible user interfaces to fulfil this research gap.

METHODS

The parallel design method is raised from Tan’s design framework of photonic soft furnishing⁶. Apart from Tan’s design model, in this poster the framework focus on fashion design and broader smart textiles and technology. It focuses on comprehensively synthesizing fashion, smart textiles, and technology in the whole design process. While smart textiles design method used here organically integrates interaction into fashion pieces by touch-sensitive fabric and tassel fabricating.

RESULTS

The wireless (Wi-Fi) interactive fashion collection pays special attention to the customer group that still relies on physical stores, who is generally tired of the online shopping trend and focuses more on the tactility and texture of the garments. Meanwhile, design in the theme of minority culture aims to increase attractiveness and freshness by exhibiting and expressing unique lifestyles and aesthetics. The interactive fashion collection offers an interactive, innovative and texture touching experience. The sales and product virtual information on the App is accessed automatically by simply touching or scratching the textile texture of the garments, where the touch sensors are integrated into the fabric. Confidence, quality, mobility, and convenience have great potential to be gained during the experience of interaction. Moreover, the customer touch duration and frequency can be collected by the App and transmitted to the retailer’s server for future target design and customized services (as shown in figure 1).

Minority-culture-led fashion design: A collection with 8 show looks (named Shangri-La) is designed in the theme of minority culture of the Yi and Miao group (name of two minority groups) living in south-western China, where the researcher comes from. The design purpose is to bring ancient culture back to life via fashion design rather than in a cold museum. Moreover, background images, videos, and text of design theme are illustrated on App by interacting with fashion pieces to exhibit the unique culture. Visual elements including pattern, colour palette, and handcraft (embroidery, beading, tassel, and accessory) are absorbed from Yi and Miao’s traditional clothing⁷⁻⁹. The silhouette of fashion pieces is from sustainable ideas of Yi and Miao’s patternmaking for minimizing waste of fabrics (first-hand resources from field research see figure 5).

Touch-sensitive textile design: Smart textiles design method used here organically integrates interaction into fashion pieces by touch-sensitive fabric and tassel. The touch interfaces on fashion pieces use a conductive fabric bonded behind garment fabrics and use silver-coated threads weaving with aesthetic tassels¹⁰. Based on a capacitive sensing mechanism, those textile sensors detect customer touch by coupling with a microprocessor-based interactive system.

Wireless interactive system design: An interactive system with App is designed by using a ‘sensing-process-actuating’ process model based on wireless communication technology (see figure 2). Dedicated Wi-Fi is selected as network communication technology in public spaces for massive users.

University, Hong Kong

Fig.1 Design of the smart fashion collection interacting with App via IoT in concept stores for improving the experience and strengthening the connection between of- fline and online shopping.



RESULTS

Fig.2 Interactive system design with mobile app by applying Wi-Fi technology and PCB technique.

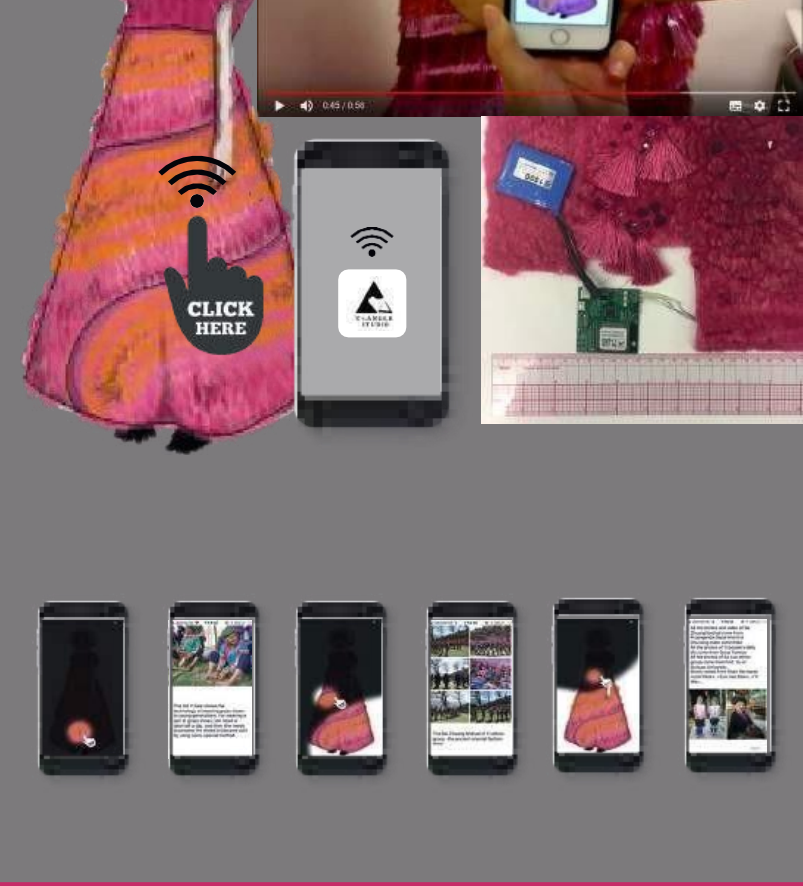


Fig.4 Photography of the Shangri-La collection.



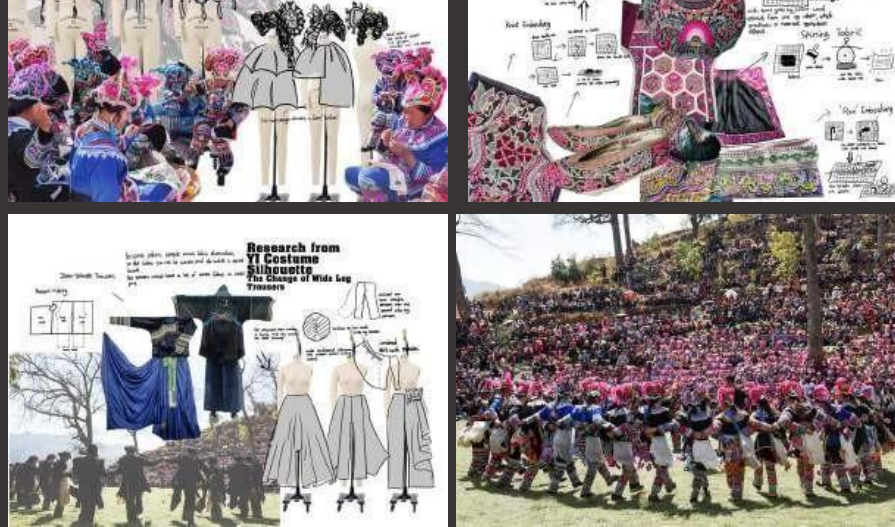
Mobile App as the actuating interface is designed to guide customers to interact with the fashion pieces. Corresponding background information and online product connection are illustrated via App interfaces¹¹. A portable printed circuit board (PCB) manufactured to carry a microprocessor unit and a power supply system is minimized so that it is non-invasive to embed in fashion pieces.

Minority-culture-led Fashion Design Touch-sensitive Textile Design Wireless Interactive System Design
Fig.3 The parallel design method comprehensively considering fashion design, smart textiles, and technology.

Minority-culture-led Fashion Design	Touch-sensitive Textile Design	Wireless Interactive System Design
Concept & Mood		Manner of Interaction
Visual Element	Textile Structure & Appearance	Actuating Effect (App)
	Functional Material (Conductive)	
Material	Technique of Integration (bonding/ Stitching/ Embroidery/ Weaving)	Touch-sensitive Mechanism
Fashion Pattern Making		Wireless Communication (Communication)

Prototype (Toile)	Processing Unit Design
Cutting & Sewing	Assembling

Fig.5 Field research in south-western China (photos taken by Yi Pu in Chuxiong, Yunnan, China; Li Shao in Kunming, Yunnan China; Tuo Dong in Yuxi, Yunnan, China).



CONCLUSIONS

- The interactive fashion collection Shangri-La with 6 fashion pieces is designed and developed as a touch sensing tangible interface for a customer experiencing in physical concept stores by seamlessly integrating with smart materials.
- The mobile App can be freely downloaded and installed on IOS smartphones as actuating interfaces to provide guidance of manner of interaction, design background information, and online product connection.
- Conclusively, offline retail procedures may reduce warehousing, service, manpower, and product layout. Online retailing and offline experience are possible to be seamlessly coupled with the proposed

Shangri-La collection in revolutionary concept stores.

- Although, this design research does not verify improvement on service, customer satisfac- tion, and retail itself. Innovatively, the proposed interactive fashion collection demonstrates the feasibility of integration with technology in a novel and non-invasive way.

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Keywords: Fashion Education, Pedagogy, Interdisciplinary studies, Fashion, Society, Culture

Objective

Fashion has moved in space and time, it is more interdisciplinary than ever. Scholars, academicians spanning science & technology, sociology, anthropology, ethnography, etc., are collaborating to explore different dimensions of fashion: visual, cultural, semiotics or socio-economic. From being a product of industrialisation, fashion is becoming more conceptual, a topic of interest for thinkers & intellects.

Riding on this wave of change universities across the world are re-looking at their fashion curriculums and introducing new areas of study that encourages fashion students to pursue cultural investigation of fashion. Subjects such as "Fashion, Society and Culture" and alike are introduced at undergraduate level with a motivation to sensitise the students with this refashioning of fashion. In tandem with technical skills like sewing and pattern making, students are being taught thinking skills that enables them to explore socio-cultural aspects of fashion. It is safe to say that fashion education has truly moved from hand to mind. The objective of this study is to develop teaching pedagogy to encourage undergraduate students of Fashion Design/Studies to explore interdisciplinary, intersubjective, diverse & interpretive nature of fashion through research & investigation that enables them to understand fashion in both material as well as abstract forms.

The paper discusses activities that are designed and conducted in the classroom for the subjects namely "Fashion Basics", "History of Clothing" & "Fashion Society & Culture" with an objective of introducing interdisciplinary nature to fashion study and why it is important for students. The activities are designed with an intent of integration with other areas of fashion design like Pattern Making, Garment Construction and Trend Forecasting to enable students to understand the application of their learning and inferences.

Interdisciplinarity

Fashion Forecasting



Pedagogy Activities

Terminology with Fashion

Table 1 - Terminology with Fashion

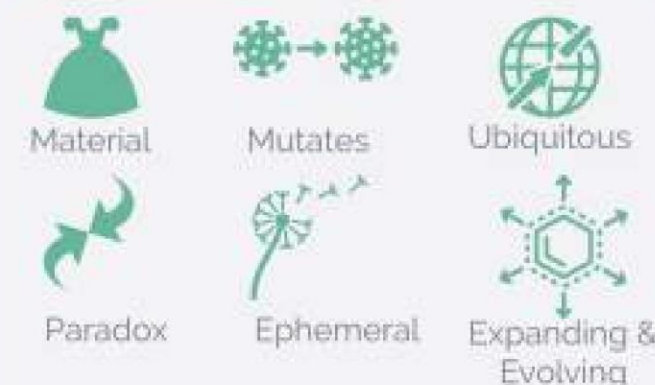
Word	New Word	Meaning
1. Show	Fashion Show	A show/event where fashion designers show their upcoming collection of clothes or accessories
2. Icon	Fashion Icon	Influential/famous people who introduce new styles of fashion, e.g. celebrities.
3. History	Fashion History	A career in fashion, which involves researching, writing and speaking about the historical context of clothing and dress.
4. Bar	Fashion Bar	Name of a night club or shopping destination in many cities
5. TV	Fashion TV	An internal fashion and lifestyle broadcasting television channel solely dedicated to fashion. It was founded in France.
6. Police	Fashion Police	An American TV series where featured panelists critiqued celebrity fashion. Also referred to fashion experts who criticise clothes people wear
7. War	Fashion War	A Hong Kong Television Drama about a fashion magazine
8. Zombie	Fashion Zombie	Fashion Zombies is a song by American band The Aquabats, a satire on fads and popular fashion
9. Law	Fashion Law	A specific field of law that deals with legal issues that impact fashion industry
10. Consultant	Fashion Consultant	A fashion expert who helps clients their image makeover and provide shopping assistance
11. Editor	Fashion Editor	A person who supervises content development and presentation for fashion magazines, websites or TV
12. Plate	Fashion Plate	Drawings of the latest fashion trend to disseminate latest trends and instructions how to construct the garment, using copper or steel engravings. Originated in France
13. Blogger	Fashion Blogger	Persons who blog about fashion, it's a paid and recognised profession.
14. Model	Fashion Model	A model works with fashion designers, photographers and brand to showcase products. Now there are specialised models for runway, editorials, swim suits, super hero and fashion calendar etc.
15. Bug	Fashion Bug	A person who's always in latest trends. Also a fashion retailer
16. Theory	Fashion Theory	Theories that explain fashion dissemination.
17. Journalist	Fashion Journalist	Journalists who specialise in the research and inactivate about fashion and trends
18. Stylist	Fashion Stylist	A professional who creates unique and iconic looks for clients, editorial and commercial photo shoots or movies. They don't design clothes.
19. Buyer	Fashion Buyer	A professional who makes purchasing decisions for a retailer on what styles to be stocked.
20. Victim	Fashion Victim	A person who feels being fashionably dressed is most important and blindly follow latest trends.
21. Commodore	Fashion Commodore	A person who is fashionably dressed to make impression and identify fashion icons trends
22. Capital	Fashion Capital	A species of butterfly in the family Nymphalidae which is native to tropical Milan, New York London.
	Fashion Capital	A city with a major influence in international fashion and holds fashion weeks. Paris.

Meanings of the words are searched by students from various sources and written as per their understanding.

As per the activity, the class brainstorms to list down a set of words to which they add the prefix "fashion", and then look for the meaning of the new word to understand its relevance to fashion, and the results are insightful and fun. Refer to Table 1 for some words that are usually discussed in the class.

Inference: The activity offers students opportunity to learn about different terms, professions & concepts related to fashion, in a non-linear manner, underlining the interdisciplinary nature of fashion through an engaging, interactive & cognitive process. Further the students are asked to research more on these words and find examples. Simultaneously, they find the term 'fashion' so fascinating that if used as a prefix it has the power to turn something dull into fun & intriguing for example, Fashion Law, Fashion Police, Fashion War, Fashion Plate & my personal favourite Fashion Commodore, which actually is a species of butterfly.

Fashion Making Sense of it



Fashion History



The activities demonstrates 1. Importance of Fashion in understanding past eras, societies, culture, class, gender & religious identities. 2. The aim of the activity is to make history of clothing stimulating with hands-on activities that allow integrated learning
Result: High engagement with materials, deep understanding of construction of historic costumes and interdisciplinary nature of the course.

Proactive Education as a Tool for Mediating Fashion Across Borders

Building a Library of Fashion Business Case Studies to Teach Sustainability

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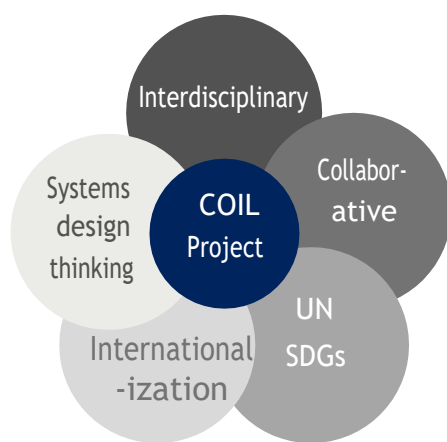
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Introduction

A shift towards sustainability is crucial to the future of the fashion industry. Students of fashion disciplines - the key players of the future - need to understand, empathize and visualize the future meaning of sustainability. The authors believe that such a future vision or development could be executed only through interdisciplinary and international collaborations; thus the tool used in the classroom is in the form of Collaborative Online International Projects (COIL). In addition, developing analytical, creative, and innovative thinking is essential for students to gain a competitive advantage when entering the workforce (Louca et al., 2014). The authors introduced case studies into their classrooms to synthesize the approaches. Advanced case studies help learners apply various thinking methods and in the process of their existing knowledge from the leading publication, it is observed that the complexity of a limited array of sustainability-focused case studies (2019) with localization being another overlooked aspect, the idea of a tailored library of contemporary, Canadian specific case studies focused on innovative business models has organically emerged. Thus, the project aimed to create a collection of multimedia open, fashion-specific, educational resources, drawing on local entrepreneurs carrying sustainability at heart.

Project Pedagogy & Methodology

The pedagogy framework is based on five main pillars: interdisciplinary learning, internationalization at home, collaborative online learning, systems design thinking, and UN Sustainable Development Goals (SDGs). Students are challenged to look at the current fashion industry through a different lens and create alternative business solutions through the sustainability principles of circular economy and systems design thinking.



The project is aligned with SDG 8 - Decent Work and Economic Growth, 11 - Sustainable Cities And Communities, and 12 - Responsible Consumption And Production, as defined by the United Nations and the educational institution (Humber Institute of Technology and Advanced Learning) Learning outcomes (HLOs):



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Timeline

To date, the authors have created four case studies based on local apparel businesses run by BIPOC entrepreneurs. Students participated in system design thinking workshops to further enhance their critical thinking and support the development of intellectual curiosity from a future perspective (Scharmer, 2018).

The first case study called “KLWD: A Canadian Streetwear Start-up Case Study” is based on the streetwear apparel brand KLWD, operating in Toronto and Barbados, displaying some of the successes, challenges, and common roadblocks small brands face in the early stages of development.

The second case study called “An Open Conversation About Sustainable Denim For A Global Consumer: Translate Opportunities Into Solutions” outlines the journey of Ani Wells, a sustainable denim entrepreneur based in Toronto, who has challenged the existing denim-focused business models by turning her e-commerce site Simply Suzette into a thriving educational, online sharing platform. This project grew internationally through a partnership with Senac University, Sao Paolo, Brazil.

29 students 2 schools, 4 disciplines 4 continents

2019

Winter 2021

Summer 2021

Fall 2021

Following the success of the previous projects, in May 2021, the authors launched the next phase of the collaboration with a new partner, Nottingham Trent University (NTU), Nottingham, UK, tackling the challenges of UK-based bespoke tailor Nicholas Simon. The brand focuses on delivering made-to-last fashion, promoting mindful consumption and high-quality production. Through this project, the students were exposed to and worked on a real-world consulting project.

29 students 3 continents

2 schools, 5 disciplines

In October 2021, Humber College partnered with Nottingham Trent University in the most current Collaborative Online International Project (COIL). A new case study “Charting A New Path For Sustainable Fashion: How Folklore's Indian Fusion Wear Impacts Canada's Fashion Scene” focused on Sana Sapra, the female business owner of the Indian fusion wear brand Folklore. As a result, students have charted a new pathway for sustainable fashion and Indian fusion wear in Canada's fashion scene.

75 students 4 continents

2 schools, 5 disciplines

Testimonials

“After two semesters of thoroughly studying the different aspects of sustainability and analyzing how the diverse issues impact not only the environment but our society as a whole, I came across a lot of information. The COIL Project experience not only helped me summarize, identify relevant information, and simplify complex concepts in order to help my team members have a better understanding of the topic. Since they came from different backgrounds, cultures, and programs, not all of them have had previous contact with sustainability and in many cases, they weren't able to see the big picture and understand the impact the different practices have on the supply chain. Through our brainstorming meetings, I was able to summarize all the knowledge I've acquired in the last months and engage in meaningful conversations with my teammates. In addition, as we had a specific target audience in mind for our prototype, I needed to organize the ideas and choose key topics and concepts to successfully engage our particular audience.”

- Mariana Ames, Fashion Management and Promotion PG, Humber College, Winter 2021

Being part of the COIL project was one of the most interesting experiences during my education. I was able to implement my knowledge in marketing, business and even project management. COIL helped me to realise the importance of thinking outside the box and gave me a great opportunity to work with amazing people from different countries!

- Anna Zakharchenko, Fashion Management and Promotion PG, Humber College, Fall 2021

Conclusion

To mediate fashion across borders, the project included three education institutions from Canada, Brazil, and the UK. Student feedback has been gathered through anonymous questionnaires, individual reflection papers with open-ended questions, and one-on-one discussions with learners between January 2020 and May 2021. It can be concluded that the teaching materials have allowed students to relate, observe, and provide innovative solutions more critically. To implement the process in future classroom projects, educators can utilize system design frameworks combined with tailored local case studies.

IFFTI

*Subtheme:
MEDIATING FASHION*

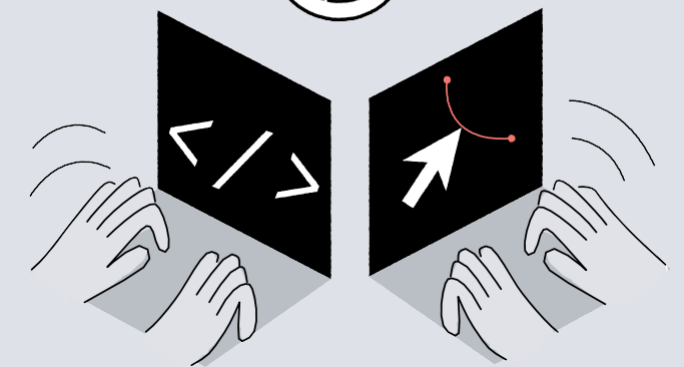
RESIDENCIES OR HACKATHONS: FUTURE RECRUITMENT FOR FASHION-TECH

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Today's Fashion-Tech landscape is in a state of flux - fashion and tech sectors are becoming increasingly more closely aligned, digitisation is key, and environmental issues are driving new processes and agendas within the industry. Companies do not necessarily know all the solutions but rather look to future talent to continue to grow and scale their organisations for ongoing innovation in the sector. The FTAlliance project held online workshops with industry partners to interrogate the new challenges to companies and the recruitment strategies and talent assessment tools they are using in recruiting future talent. While all companies agreed the formal interview still to be the best way to assess a candidate, a variety of other recruitment practices were also promoted to ensure the right person is hired.

HACKATHONS

An effective way for companies to find the best people (with the right skillsets and mindset) for their businesses to remain responsive and constantly agile.

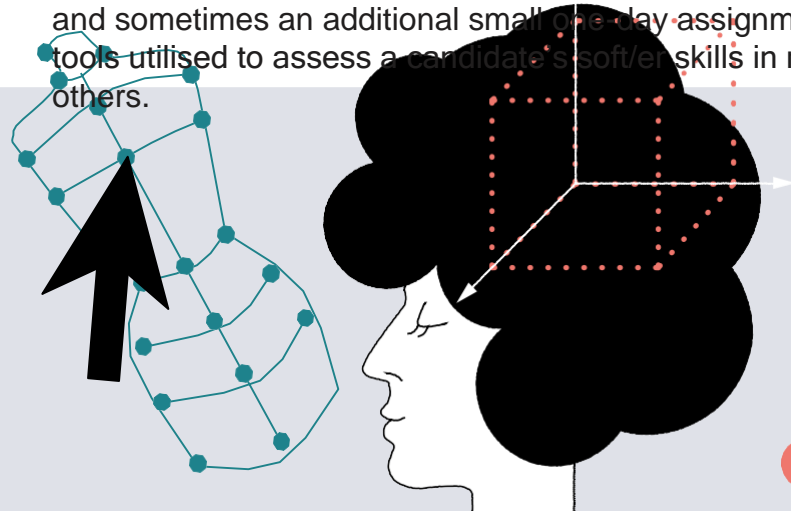


NETWORKING & COLLABORATION

'Stay close to the talent pool' was the clear resounding message from Fashion-Tech employers who understand that their collaborations with HEIs via industry projects, networking and knowledge exchange events and open days allow them to assess students before they graduate.

ASSESSING SOFT/ER SKILLS

The industry is also prioritising soft/er skills - being entrepreneurial, a collaborative team player, open to change...
— Group-based assessment opportunities; the completion of a problem-solving brief; presenting to a group; a group interview and sometimes an additional small one-day assignment are all tools utilised to assess a candidate's soft/er skills in relation to others.



RESIDENCIES // INTERNSHIPS

To assess skills and suitability of future talent over a longer-term.
— Companies such as Grado Zero Innovation offer built-in project based traineeships within interdisciplinary teams to assess an individual's suitability for their company.



3D MINDSET

Digitisation means the industry seeks a variety of new skillsets from its designers.
— However, 3D skills are not necessarily essential, what is more important is that candidates have a 3D mindset and are open to learn new and different software, as companies are offering digital training.

Portfolios are still important but should no longer only highlight collections of final products but rather emphasise more fully process and conceptual thinking.
— Students need to consider in what way they can better pitch their ideas, demonstrate skills and present their work to also highlight their entrepreneurial mind-set and fresh innovative ideas.



ONLINE INTERVIEWS

The pandemic/Covid-19 has ushered in new recruitment processes such as the digital interview combined with online assessment tasks as tools for a more global approach to recruitment.

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FTAlliance

Weaving Universities and Companies
to Co-create Fashion-Tech Future Talents

FTAlliance 'Weaving Universities and Companies together to Co-create Fashion-Tech Future Talent' is a 3-year (2020-2023) Erasmus+ funded academia-industries partnership aimed at facilitating the exchange/flow of knowledge and co-creation within the Fashion-Tech sector to boost students' employability and innovation potential.

To find out more visit:
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Avancées

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Figure 1. Malt and its arrangement: A. Durr B. Flower C. Ring planet, and Lindes head iron D. Tree E. Peacock F. Grepper G. Geometry H. Peacock Abroad

Abstract

Producing a wide scope of weave colours is challenging with a limited number of a weft yarn colour variety in modern Jacquard weaving. The primary colour yarns of CMYK colour system (cyan, magenta, yellow and black) are suggested to replicate varied Jacquard designs. However, there is a limitation due to the nature of the CMYK system as it can only display approximately 56% of the colours which are perceived by human eyes. However, there is potential to improve colour reproduction quality by expanding a range of primary yarn colours. In colour printing, red [R], green [G], and blue [B] are popularly used in line with C, M, Y, and K colours. Therefore, in this research, two sets of the primary yarn colours (RGB and CMYK) are used to produce weave colours and the results are compared and examined.

Introduction

Weave colours are created by interweaving at least two sets of weft and warp yarn colours ^{1, 2}. Producing a large scope of weave colours with a small variety of weft yarns is challenging, but important in modern digital Jacquard weaving ³.

According to Kim et al. ^{4, 5}, using the subtractive CMYK colour model is suggested to reproduce multi-coloured artworks. However, as the CMYK colour gamut can display approximately 56% of the colours ⁶, there is a limitation in colour reproduction. In colour printing, the four primary colour pigments (C, M, Y, and K) are widely used, but red [R], green [G] and blue [B] colours are also considered to enhance colour reproduction quality.

Therefore, this study aims to inspect weave colour effects when the two primary colour sets are applied to production. The prototypes of weave colour samples were produced by jacquard machine and the experiment results were described in CIELAB values (Figure 1).

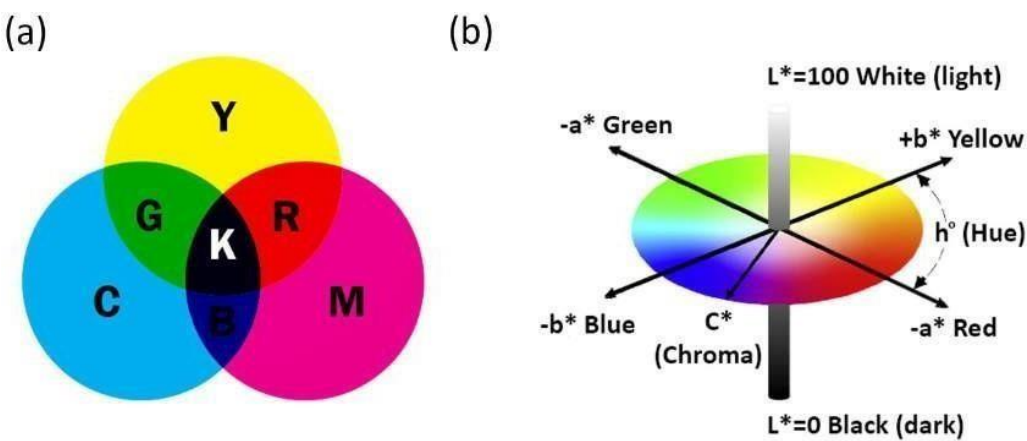


Figure 1. (a) The subtractive CMYK colour model; (b) International Commission on Illumination (CIE) LAB colour space ⁷.

Methodology

[R]+[G], [M]+[G], [B]+[R], [C]+[R], [B]+[G], and [B]+[Y].

- The prototypes of weave colour samples are produced and measured by spectrophotometer (X-Rite Ci7500, UK) with the iControl software (X-Rite PANTONE®, UK).

Secondary weave colour production

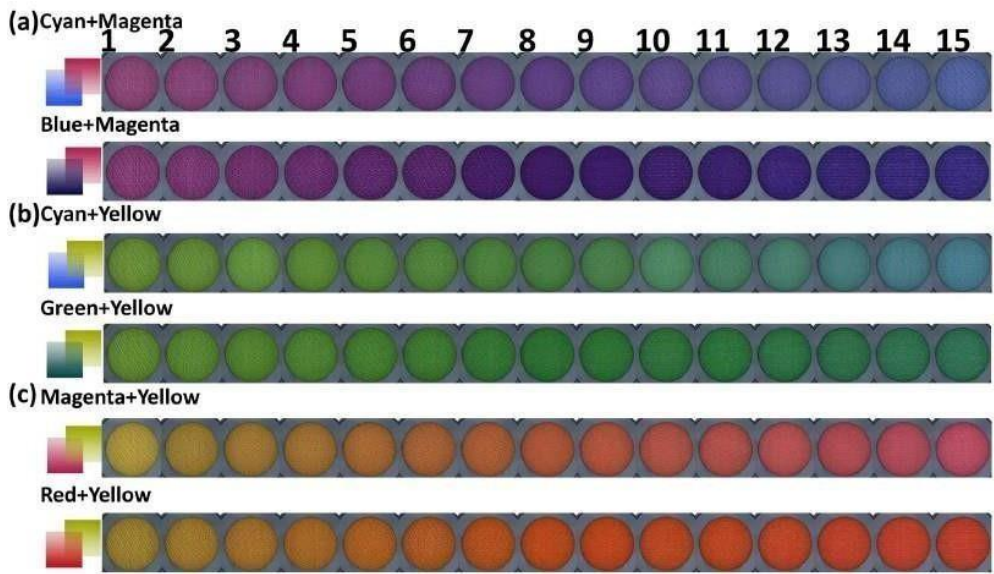


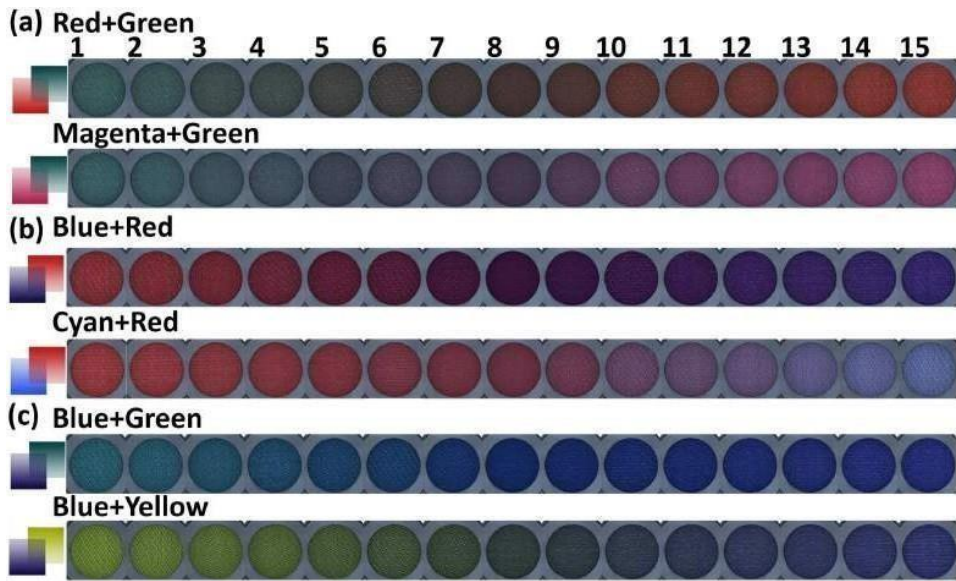
Figure 2. Secondary colour production comparison. Fabric images of (a) [C]+[M] vs. [B]+[M]; (b) [C]+[Y] vs. [G]+[Y]; (c) [M]+[Y] vs. [R]+[Y].

In this study, two sets of primary colours (C, M, Y, K, R, G, and B) are paired to produce secondary weave colours. The experiment results are shown in Figure 2 to compare the weave colour differences.

For the [C]+[M] and [B]+[M] samples, all lightness values of the [C]+[M] samples are higher than the values of the [B]+[M] samples of which results indicate replacing [C] with [B] decreases the lightness of the fabric. For the [C]+[Y] and [G]+[Y] samples, the test results imply that more vivid tones of green colours are produced with using the green yarn. Comparing the [M]+[Y] and [R]+[Y] weave colours, the [R]+[Y] samples are slightly darker than the [M]+[Y] samples, but the saturation of the weave colours was presented better with the red yarn.

Expanding colour gamut with CMYRGByarns

Figure 3. Colour effect investigation. Images of weave colour prototype of (a) [R]+[G] vs. [M]+[G]; (b) [B]+[R] vs. [C]+[R]; (c) [B]+[G] vs. [B]+[Y].



The pair combinations of [R], [G], and [B] yarns (i.e., [R]+[G], [R]+[B], and [B]+[G]) were produced and compared with the three groups of weave colours of which pair combinations were produced by replacing [R], [G], and [B] yarns with the similar yarn colours from CMYK system (i.e., [M]+[G], [C]+[R], and [B]+[Y]). Fifteen weave colour samples are produced in each combination to examine the colour differences.

- Two sets of primary colour yarns: cyan [C], magenta [M], yellow [Y], red [R], green [G], and blue [B].
- Twelve colour combinations: [C]+[M], [B]+[M], [C]+[Y], [G]+[Y], [M]+[Y], [R]+[Y],

Conclusions

Figure 4. CIELAB gamut expansion by adding RGB yarns. (a) Measured a^*b^* values of using CMY yarns mixing and (b) the expanded gamut with CMYRGB yarns.

- Producing a large scope of weave colours by using a small variety of weft yarn colours are important to improve colour reproduction quality.
- The CIELAB colour space was expanded by adding [R], [G] and [B] coloured yarns. Feasible hue and chroma range were expanded compared with using only [C], [M], and [Y] yarn colours.
- The [R], [G], and [B] yarns could be considered to expand a feasible weave colour gamut.
- These findings contribute our understanding of the possibilities in colour reproduction and suggest great potential in producing a wide scope of weave colours by using primary colours yarns.

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